Claim Amendments

1.   (currently amended) A scheduler for a plurality of ~~packet storage devices~~ FIFOs, the scheduler comprising:

a ~~memory device~~ ROM adapted to store a look-up table (LUT) that maps an input address to a LUT output, wherein:

the input address corresponds to current status of one or more of the ~~packet storage devices~~ FIFOs; and

the LUT output identifies a next ~~packet storage device~~ FIFO to select for service and whether the next ~~packet storage device~~ FIFO has data available for service;

a latch adapted to store and forward the LUT output; and

~~an extractor~~ a finite state machine (FSM) implemented using combinatorial feedback logic and adapted to receive the forwarded LUT output from the latch and to generate (1) a latch enable (LE) control signal that enables the latch to forward the LUT output and (2) a read enable (RE) control signal that identifies which one or more ~~packet storage devices~~ FIFOs are to be serviced.

2.   (canceled)

3.   (currently amended) The invention of claim 1, wherein the ~~extractor~~ FSM comprises an FSM having an IDLE state and an EXTRACT state, wherein:

when the FSM is in the IDLE state and a currently selected ~~packet storage device~~ FIFO has no data available for service, the ~~extractor~~ FSM sets the LE control signal to enable the latch to forward the LUT output; and

when the FSM is in the EXTRACT state and service of the currently selected ~~packet storage device~~ FIFO is completed, the ~~extractor~~ FSM sets the LE control signal to enable the latch to forward the LUT output.

4.   (currently amended) The invention of claim 3, wherein:

when the FSM is in the IDLE state and at least one ~~packet storage device~~ FIFO has data available for service, the FSM transitions to the EXTRACT state; and

when the FSM is in the EXTRACT state and no ~~packet storage device~~ FIFO has data available for service, the FSM transitions to the IDLE state.

5.   (currently amended) The invention of claim 1, wherein the current status of the one or more ~~packet storage devices~~ FIFOs comprises an indication of whether each ~~packet storage device~~ FIFO has data available for service and an indication of which ~~packet storage device~~ FIFO is currently selected for service.

6.   (currently amended) The invention of claim 5, wherein a ~~packet storage device~~ FIFO has data available for service when the ~~packet storage device~~ FIFO currently stores more than a specified ~~non-zero~~ threshold number of data packets.

7.   (currently amended) The invention of claim 1, wherein the ~~extracter~~ FSM is further adapted to receive service status information from the ~~packet storage devices~~ FIFOs.

8.   (currently amended) The invention of claim 7, wherein the service status information comprises an indication of completion of service of the currently selected ~~packet storage device~~ FIFO.

9.   (canceled)

10.   (canceled)

11.   (currently amended) A method for scheduling service for a plurality of
~~packet storage devices~~ FIFOs, the method comprising:

accessing a look-up table (LUT) stored in a ROM with an input address to
retrieve a LUT output, wherein:

the input address corresponds to current status of one or more of the
~~packet storage devices~~ FIFOs; and

the LUT output identifies a next ~~packet storage device~~ FIFO to select for
service and whether the ~~packet storage device~~ FIFO has data available for
service;

storing and forwarding the LUT output based on a received latch enable
(LE) control signal;

with a finite state machine (FSM) implemented using combinatorial
feedback logic:

generating the LE control signal based on the forwarded LUT
output; and

generating a read enable (RE) control signal that identifies which
one or more of ~~packet storage devices~~ FIFOs are to be serviced, based on
the forwarded LUT output.

12.   (canceled)

13.   (currently amended) The invention of claim 11, wherein the LE and RE
control signals are generated using an FSM having an IDLE state and an
EXTRACT state, wherein:

when the FSM is in the IDLE state and a currently ~~packet storage device~~
FIFO has no data available for service, the LE control signal is set to forward the
LUT output; and

when the FSM is in the EXTRACT state and service of the currently
selected ~~packet storage device~~ FIFO is completed, the LE control signal is set to
forward the LUT output.

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14.   (currently amended) The invention of claim 13, wherein:

when the FSM is in the IDLE state and at least one ~~packet storage device~~ FIFO has data available for service, the FSM transitions to the EXTRACT state; and

when the FSM is in the EXTRACT state and no ~~packet storage device~~ FIFO has data available for service, the FSM transitions to the IDLE state.

15.   (currently amended) The invention of claim 11, wherein the current status of the one or more ~~packet storage devices~~ FIFOs comprises an indication of whether each ~~packet storage device~~ FIFO has data available for service and an indication of which ~~packet storage device~~ FIFO is currently selected for service.

16.   (currently amended) The invention of claim 15, wherein a ~~packet storage device~~ FIFO has data available for service when the ~~packet storage device~~ FIFO currently stores more than a specified ~~non-zero~~ threshold number of data packets.

17.   (currently amended) The invention of claim 11, wherein the LE and RE control signals are generated based on service status information from the ~~packet storage devices~~ FIFOs.

18.   (currently amended) The invention of claim 17, wherein the service status information comprises an indication of completion of service of the currently selected ~~packet storage device~~ FIFO.

19-33. (canceled)